



STATE OF WASHINGTON

DEPARTMENT OF ECOLOGY

P.O. Box 47600 • Olympia, Washington 98504-7600
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May 8, 2002

Dear Interested Person:

Enclosed is Ecology's interim enforcement policy for cathode ray tubes (CRTs), and for other computer related electronic wastes that are dangerous wastes. This is not a new dangerous waste stream; however, awareness has recently been heightened that, due to its unique nature, special management standards are appropriate for this waste stream. This interim enforcement policy gives regulatory relief to those who recycle their CRTs. This policy, which is meant to encourage recycling, will remain in effect until either Ecology adopts a rule that addresses this waste stream, or until the policy needs to be modified.

Monitors and televisions that contain CRTs have been tested using the Toxicity Characteristic Leaching Procedure (TCLP). It is known that they designate as dangerous wastes. Less information is available about other associated electronics; however, if those electronics designate as dangerous waste and they are recycled, they can also be managed under this internment enforcement policy.

This policy applies primarily to fully regulated generators. However, because CRTs are heavy, containing several pounds of lead, many businesses are finding themselves in the position of being a dangerous waste generator for the first time. This policy will help people understand their responsibilities for managing this waste stream.

If you have questions about this policy, staff are available to help you. Please contact Tom Cusack at (360) 407-6755 or Chipper Hervieux at (360) 407-6756.

Sincerely,

Greg Sorlie, Manager
Hazardous Waste and Toxics Reduction Program

Enclosure

GS:CH:cb





Interim Enforcement Policy Conditional Exclusion for Cathode Ray Tubes* and Related Electronic Wastes

**This policy applies to monitors and televisions that contain CRTs, which are known to designate as dangerous waste. Ecology does not have test information on other personal computer related electronic equipment. If such equipment designates as dangerous waste, it can be managed according to this enforcement policy if it is recycled. Only wastes that designate as dangerous waste are subject to regulation under the Dangerous Waste Regulations.*

The Washington Department of Ecology (Ecology) is announcing an interim enforcement policy¹ pending formal proposal and adoption of a conditional exclusion for cathode ray tubes (CRTs) from the *Dangerous Waste Regulations*, Chapter 173-303 WAC. To be eligible for this enforcement policy, the CRTs must be recycled.

The purpose of this interim enforcement policy is to inform generators, transporters, and operators of facilities that collect, accumulate, and dismantle monitors and other personal computer related equipment that, within its enforcement discretion, Ecology will refrain from enforcing portions of the *Dangerous Waste Regulations* provided the conditions in this policy are met.

Background

Other states and EPA are in the process of considering options for how to best manage CRTs. Options include management as universal waste and conditionally excluding CRTs from dangerous waste regulation. Ecology has chosen to issue this policy as an interim measure while developing a more permanent solution through rule making. This enforcement policy is patterned after EPA's draft approach of conditionally excluding CRTs provided they are recycled.

This policy is meant to apply primarily to fully regulated generators; however small quantity generators and those managing household hazardous waste may also choose to follow the requirements in this policy. Cathode ray tubes are found in computer monitors and televisions and designate as characteristic dangerous waste primarily for the lead content. A waste that designates as a dangerous waste is subject to regulation according to standards that vary based on the source and amount of waste that is generated. For example, household hazardous waste is exempt from the state's *Dangerous Waste Regulations*. Counties or other entities that manage household hazardous waste are not required to

comply with the same regulations as businesses that generate dangerous wastes. However, local ordinances may require household hazardous waste to be managed the same as business wastes. Businesses that generate dangerous wastes must follow requirements depending on the amount of waste they generate. A significant cut-off point is 220 pounds. A business that generates less than 220 pounds per month has fewer requirements to follow than a business that generates more than 220 pounds per month. Since CRTs and monitors are heavy, it does not take many to shift someone from small quantity generator status to a fully regulated generator.

This policy is written primarily for businesses that are fully regulated generators under the *Dangerous Waste Regulations*, and gives them regulatory relief, via the use of enforcement discretion by Ecology when they recycle their CRTs and other personal computer equipment according to the requirements described in this policy. This policy also addresses transportation and recycling of CRTs. Those not subject to the *Dangerous Waste Regulations*- those managing exempt household hazardous

¹Enforcement policy means that Ecology will use enforcement discretion and not enforce against someone who is managing their CRTs in accordance with the requirements set out in this policy.

waste, for example- are encouraged to follow the requirements in this policy, which encourage proper recycling.

The management of CRTs found in computer monitors and televisions has become a concern nationwide. The intent of this enforcement policy is to encourage recycling and to reduce the impact of this fast growing waste stream on the environment. The current *Dangerous Waste Regulations* are a barrier to this goal by requiring that these wastes be fully regulated as dangerous waste. While every effort is being made by Ecology to consider future regulatory/management options for rule making, this interim enforcement policy is intended to provide clear direction concerning the management of CRTs when legitimately recycled. This interim enforcement policy will remain in effect until Ecology addresses this electronic waste stream through rule making or until Ecology determines that the policy requires modification.

This enforcement policy ensures that these wastes are managed in a way that is protective of human health and the environment, and that they are managed in a manner that supports Ecology's pollution prevention, sustainability, and product stewardship efforts. Reuse and recycling are preferred end-of-life management scenarios for these wastes. Any electronics addressed in this interim policy that designate as dangerous waste that are not recycled remain subject to full regulation and Ecology enforcement under the *Dangerous Waste Regulations*. Monitors and other equipment that can be reused are not considered waste and are not subject to the *Dangerous Waste Regulations*.

What This Enforcement Policy Allows

Monitors and televisions that contain CRTs, and CRTs that have been removed from monitors and televisions that are generated, transported, collected, accumulated, dismantled, and recycled:

- ❖ Do not have to be counted as a dangerous waste (which means that generator status is not affected).

- ❖ Do not need to be manifested when transported off-site (although any applicable Department of Transportation requirements for transportation of hazardous materials still apply).
- ❖ Must be legitimately recycled including glass to glass recycling, reclamation, reuse of parts, and smelting operations:
 - Glass-to-glass recycling means processing CRT glass into new CRTs.
 - Reclamation includes businesses that salvage usable parts (e.g., "dismantlers") to refurbish other electronics.
 - Smelting operations include those processes that use CRTs for their lead and/or silica value.

Other related personal computer equipment such as central processing units, printers, and keyboards that are found to designate as dangerous waste may be managed as described above. Recycling of associated materials that do not designate as dangerous waste is highly encouraged.

Equipment that can be reused, such as business and local government sponsored collection programs that collect and pass computers and monitors on to schools and other organizations, is not covered by this policy. Such equipment has not yet become a waste.

What Requirements Must Be Followed

By Generators

- ❖ CRTs and personal computer related equipment that designate as dangerous waste must be recycled.
- ❖ CRTs can be taken to an intermediary for dismantling or demanufacturing or to a consolidator prior to recycling.
- ❖ Accumulate CRTs in a manner that minimizes unintentional breakage and is protective of the environment.
- ❖ Accumulation is allowed for up to 180 days. CRTs, other personal computer related electronic wastes, and televisions must be moved off-site to a facility for recycling within 180 days. An extension may be given by Ecology under certain circumstances. For example, if accumulation of certain quantities will facilitate proper

recycling, including when it would be more cost effective to transport a full load.

- ❖ Speculative accumulation is not allowed.
- ❖ Must comply with:
 - Applicable local and other state laws.
 - Department of Ecology's cleanup authority. (WAC 173-303-050)
 - Spills and Discharges. (WAC 173-303-145)
 - Special Powers and Authorities. (WAC 173-303-960)
 - Export requirements as listed below.

By Transporters

Ensure delivery of CRTs, other personal computer related electronics, and televisions to a recycler, dismantler, demanufacturer, smelter, or a person who is consolidating electronics for more efficient transportation to a recycling location, and comply with the following:

- ❖ Department of Ecology's cleanup authority. (WAC 173-303-050)
- ❖ Spills and Discharges. (WAC 173-303-145)
- ❖ Special Powers and Authorities. (WAC 173-303-960)
- ❖ Generator requirements if consolidating equipment prior to delivery to a "facility."

By Facilities

Operators of facilities that collect, store, demanufacture, or dismantle must comply with the following:

- ❖ Send a letter to Ecology, notifying that they are handling CRTs and related equipment. The letter should also state whether or not the handler will be exporting materials outside of the country. This is not a notification using Ecology's Form 2, and an ID number is not required. A letter may be sent to Hazardous Waste and Toxics Reduction Program, TAP Section, Department of Ecology, PO Box 47600, Olympia WA 98502. This type of notification is being piloted during this interim enforcement discretion period.
- ❖ Have a trained, responsible individual supervising operations at all times.
- ❖ Operate and maintain the facility so as to prevent threats to human health or the environment.
- ❖ Conduct all physical dismantling activity inside a building.
- ❖ Utilize trained personnel and equipment to ensure proper operation of the facility.
- ❖ Control litter, dust, noise and other nuisances in operation of the facility.
- ❖ Have measures in place to prevent and control fires.
- ❖ Allow authorized Ecology representatives access to the facility to assess compliance with the conditions of the enforcement policy.
- ❖ After physical dismantling, CRTs must be sent for recycling such as the extraction of the metals from the CRTs in a smelting operation, or glass to glass recycling in the manufacture of new CRTs.
- ❖ Intact CRTs can be shipped under a bill of lading and must meet applicable hazardous material (DOT) transportation requirements. Broken or crushed CRTs can also be shipped under a bill of lading but must be packaged to prevent releases to the environment and labeled as CRTs.
- ❖ Accumulate CRTs in a manner that minimizes unintentional breakage and is protective of the environment.
- ❖ Intentional crushing for more efficient transportation or for recycling is allowed.
- ❖ Accumulation is allowed for up to 180 days. CRTs and other personal computer related electronic wastes must be moved off site within 180 days for recycling. They should be tracked by date of receipt. An extension may be given by Ecology under certain circumstances. For example, if accumulation of certain quantities will facilitate proper recycling, including when it would be more cost effective to transport a full load.
- ❖ Speculative accumulation is not allowed.
- ❖ Must also comply with:
 - Applicable local and other state laws.
 - Department of Ecology's cleanup authority. (WAC 173-303-050)
 - Spills and Discharges. (WAC 173-303-145)
 - Special Powers and Authorities. (WAC 173-303-960)

Exporting Requirements

Individuals or facilities exporting CRTs, personal computer related electronics, and televisions outside the United States must have documentation that the receiving facility will legitimately recycle the electronic materials.

Documentation should include contracts that include the name and location of the recycling facility and responsible individual, and a tracking system that includes dates shipped and received, amounts shipped, and a description of the arrangements for the recycling of the CRTs, other personal computer related electronic materials, and televisions.

Circuit Boards

Circuit boards that are being recycled are not subject to this enforcement policy. They are already addressed in the *Dangerous Waste Regulations*. Spent printed circuit boards may be managed under the scrap metal exemption at WAC 173-303-071(3)(ff).

However, if shredded for recycling purposes, they become subject to the *Dangerous Waste Regulations* (WAC 173-303-071(3)(gg)) once again until they are:

- ❖ Stored in containers sufficient to prevent a release to the environment prior to recovery; and
- ❖ Free of mercury switches, mercury relays, nickel-cadmium batteries and lithium batteries.

Disposal of CRTs

This exclusion is only for end-of-life CRTs and televisions that are generated, transported, collected, accumulated, stored, and physically dismantled (demanufactured) for recovery and recycling of useable materials. The exclusion may also be used for other personal computer related equipment that designates as dangerous waste. CRTs and other personal computer related electronics wastes that are intended to be disposed (rather than recycled) at any point in the process and residues from these activities

must be properly designated and managed under the existing dangerous waste and solid waste requirements. Ecology will enforce proper designation and management under the existing dangerous waste requirements for these wastes.

Definitions

The following definitions are for the purpose of this enforcement policy only. Some of them are defined in the *Dangerous Waste Regulations* and others were written to provide clarity as requested during the comment period on the draft policy. Definitions written here, such as enclosed facility, facility, operator, recycling facility, refurbishment, and transporter are meant to provide information during this interim period. These definitions will not be adopted into the *Dangerous Waste Regulations* when a final rule is proposed. Regulatory definitions are very specific and have been developed in a broader context. For example, there is already a facility definition in the regulations that has a very specific meaning that is not related to how facility is defined for this interim policy.

Demanufacturing

The term “demanufacturing” is not defined in the *Dangerous Waste Regulations*. It is a term often used in reference with “continued use.” For the purposes of recycling monitors and televisions only, “demanufacturing” refers to the removal of components from monitors and television sets.

Dismantler

The term “dismantler” is not defined in the *Dangerous Waste Regulations*. It is a term often used in reference with recycling of computers. For the purposes of recycling monitors and televisions only, “dismantler” refers to the taking apart of monitors and television sets for recycling purposes, other than for continued use. For example, CRTs removed from monitors to be sent to a smelter.

Enclosed Facility

An “enclosed facility” is a building with four or more walls, constructed floor and roof where monitors and televisions are to be recycled.

Facility

For the purpose of this enforcement policy, a “facility” means all contiguous land, and structures, other appurtenances, and improvements on the land used for the collection, storage, dismantling and/or demanufacturing of CRTs, computer monitors and other personal computer related equipment, and televisions.

Generator

“Generator” means any person, by site, whose act or process produces dangerous waste or whose act first causes a dangerous waste to become subject to regulation. For example, a person who takes a monitor apart and discards the CRT would be the generator of the dangerous waste (CRT).

Operator

An “operator” means the person responsible for the overall operation of a facility (as defined above).

Recycling

“Recycling” means/includes the use, reuse or reclamation of monitors, televisions and other materials. An example would be the reclamation of lead recovered from the CRT glass.

Recycling Facility

For the purpose of the CRT enforcement policy, a “recycling facility” means all contiguous land, and structures, other appurtenances, and improvements on the land used for recycling monitors and televisions. An example of a recycling facility would be a smelter or a glass to glass recycler.

Refurbishment

The term “refurbishment” is not defined in the *Dangerous Waste Regulations*. It is a term often used in management scenarios for CRTs. For the purposes of this enforcement policy, Ecology considers “refurbishment” to mean the repair of equipment that is not discarded (as defined above) by the owner of that equipment.

Speculative Accumulation

For the purpose of this enforcement policy, “speculative accumulation” means the holding, storing or accumulating CRTs, monitors, televisions, and other related personal computer equipment for greater than 180 days. Generators and facilities not in compliance with the 180 day time limit will be considered holding, storing, accumulating dangerous waste and subject to the *Dangerous Waste Regulations*.

Transporter

A “transporter” is the person who transports monitors and televisions in a vehicle.

Additional Information

Recyclers

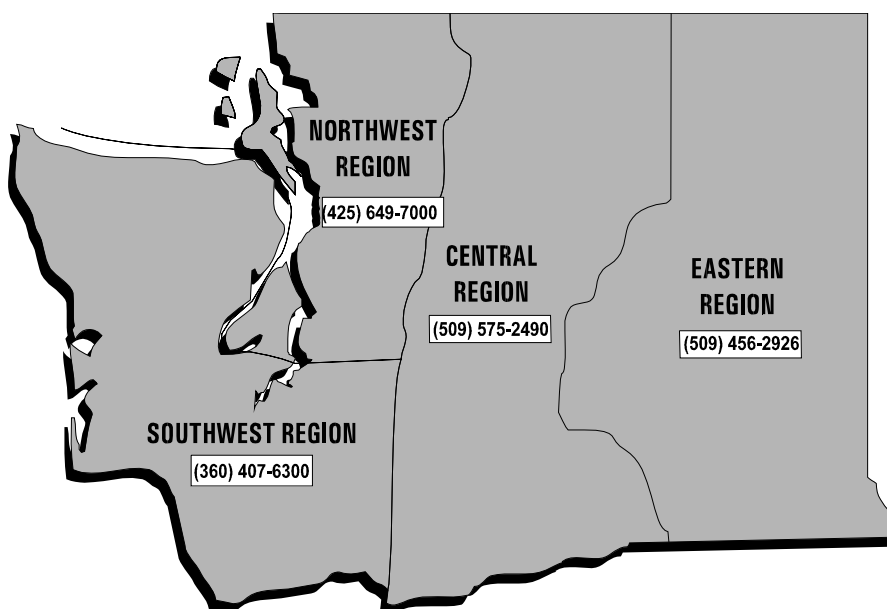
Philip Services Corp.
Attn: Marc McReynolds
955 Powell Avenue SW
Renton, WA 98055-2908
(800) 547-2436

Total Reclaim Inc.
Contact: Craig Lorch
PO Box 24996
Seattle, WA 98124
(206) 343-7443

Waste Management
Contact: Cly Lewis
7901 First Ave S
Seattle, WA 98108
(206) 505-9060

This is not an exhaustive list.

Department of Ecology



The Department of Ecology is an equal opportunity agency and does not discriminate on the basis of race, creed, color, disability, age, religion, national origin, sex, marital status, disabled veteran's status, Vietnam Era veteran's status or sexual orientation.

If you have special accommodation needs or require this document in an alternative format, please contact the Hazardous Waste and Toxics Reduction Program at (360) 407-6700 (voice) or (360) 407-6006 (TDD). Regional TDD numbers are:

CRO (TDD) (509) 454-7673
ERO (TDD) (509) 458-2055

NWRO (TDD) (425) 649-4259
SWRO (TDD) (360) 407-6306

Websites

Ecology is currently working on the National Electronics Product Stewardship Initiative (NEPSI) with other states, local governments, and computer manufacturers toward the development of a nationwide collection, transportation, and recycling system for household and small business computer equipment. We are also working on a related initiative with other western states, the Western Electronics Product Stewardship Initiative (WEPSI).

NEPSI

<http://eerc.ra.utk.edu/clean/nepsi/>

WEPSI

<http://www.recyclingadvocates.org/wepsi/>

There are many websites with information on computer related wastes, take back or turn in programs or events, and other issues. Here is a partial list of websites you may find of interest.

Northwest Product Stewardship Council

<http://www.govlink.org/nwpsc/>

Silicon Valley Toxics Coalition

<http://www.svtc.org/svtc/>

Basel Action Network

<http://www.ban.org/>

Glass to Glass Recycling

<http://www.materials4future.org/PUBS/g2g%20final.pdf>

CRT Smelting Fact Sheet

<http://www.materials4future.org/PUBS/smelting%20final.pdf>

Materials for the Future Electronics page

<http://www.materials4future.org/ELECTRONICS/elxindex.html>

King County/City of Seattle Computer Recovery Project

<http://dnr.metrokc.gov/swd/default.shtml>

Retro Systems (Canadian)

<http://www.retrosystems.com/>

Total Reclaim

<http://totalreclaim.com> (Services, then Electronics Recycling Division)

IBM: Product Takeback/Recycling Programs

http://www.ibm.com/ibm/environment/products/ptb_us.phtml

HP: Product Return and Recycling

<http://www.hp.com/hpinfo/community/environment/recycle/index.htm>